

Appendix F

Pollution Prevention/Good Housekeeping

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Appendix F.1 Salt and Sand Usage

MDOT Salt and Sand Usage

Winter 2006-2007

Municipal Salt Oct 2006-April 2007

Region	LANE MILES	TONS/DATE	TONS/LANE MILE
Superior	172.48	4951.73	28.71
North	143.41	6720.11	46.86
Grand	102.24	1840.29	18.00
Bay	288.34	4634.71	16.07
Southwest	282.96	4486.09	15.85
University	388.31	5767.71	14.85
Metro	251.69	4807.46	19.10
TOTAL	1629.43	33208.10	22.78

County and Direct Forces Salt & Sand

Oct 2006-April 2007

Region	LANE MILES	SALT/TONS	TONS/LANE MILE	SAND/TONS	TONS/LANE MILE
Superior	4029.4	84879.6	21.1	39456.8	9.8
North	4798.6	103912.3	21.7	33219.8	6.9
Grand	3387.1	80283.9	23.7	28280.8	8.3
Bay	4393.8	63837.5	14.5	58.0	0.0
Southwest	3741.8	76159.1	20.4	3115.8	0.8
University	4350.2	66930.6	15.4	11947.3	2.7
Metro	4738.3	99767.9	21.1	0.0	0.0
TOTAL	29439.2	575770.9	19.7	116078.5	4.1

Combined Total (municipal, county, direct)

Oct 2006-April 2007

Region	LANE MILES	SALT/TONS	TONS/LANE MILE	SAND/TONS	TONS/LANE MILE
Superior	4201.9	89831.3	21.4	39871.4	9.5
North	4942.0	110632.4	22.4	35953.5	7.3
Grand	3489.3	82124.2	23.5	14288.8	4.1
Bay	4682.1	68472.2	14.6	58.0	0.0
Southwest	4024.8	80645.2	20.0	67.9	0.0
University	4738.5	72698.3	15.3	10980.1	2.3
Metro	4990.0	104575.4	21.0	0.0	0.0
TOTAL	31068.6	608979.0	19.8	101219.7	3.3

Appendix F.2 Maintenance Activity Costs for MDOT Direct Forces

MDOT PCA Costs and Details FY 2007

Region	Activity		# Hours	Cost	# Units	Cost/unit
Superior	Roadside Maintenance	Catch Basin Cleanout	2,520	\$165,542	4,059	\$41
	General Maintenance	Approach Sweeping	140	\$6,775	238	\$28
		Curb Sweeping	808	\$42,458	248	\$171
		Total	3,468	\$214,775	0	\$0
North	Roadside Maintenance	Catch Basin Cleanout	1,095	\$94,723	2,011	\$47
	General Maintenance	Approach Sweeping	423	\$18,306	1,071	\$17
		Curb Sweeping	27	\$8,718	6	\$1,557
		Total	1,545	\$121,747	0	\$0
Grand	This region does not have any direct forces garages. Maintenance is done by local agencies.					
Bay	Roadside Maintenance	Catch Basin Cleanout	61	\$246,441	0	\$0
	General Maintenance	Approach Sweeping	371	\$19,858	477	\$42
		Curb Sweeping	1,143	\$433,885	100 curb miles	\$4,361
		Total	1,575	\$700,184	0	\$0
Southwest	Roadside Maintenance	Catch Basin Cleanout	551	\$168,857	1,811	\$93
	General Maintenance	Approach Sweeping	1,110	\$54,828	1,484	\$37
		Curb Sweeping	0	\$94,264	0	\$0
		Total	1,661	\$317,949	0	\$0
University	Roadside Maintenance	Catch Basin Cleanout	155	\$137,144	279	\$492
	General Maintenance	Approach Sweeping	1,165	\$51,350	3,020	\$17
		Curb Sweeping	0	\$106,472	0	\$0
		Total	1,320	\$294,966	0	\$0
Metro	Roadside Maintenance	Catch Basin Cleanout	16	\$215	119,770	\$0
	General Maintenance	Approach Sweeping	0	\$2,031	0	\$0
		Curb Sweeping	0	\$17,703	0	\$0
		Total	16	\$19,949	0	\$0
Total*	Roadside Maintenance	Catch Basin Cleanout	4,398	\$812,707	8,160	\$100
	General Maintenance	Approach Sweeping	3,209	\$151,117	6,710	\$23
		Curb Sweeping	2,004	\$685,823	0	\$0
		Total	9,611	\$1,649,647	0	\$0

* Hourly and unit totals for Catch Basin Cleanout and Approach and Curb Sweeping do not include complete data from the regions. Cost information is assumed to be correct.

Appendix F.3 Maintenance Activity Costs for Contracted Agencies

Local Agency Payment System (LAPS) Report Summary for Maintenance Activities

Region	Activity	Cost	Lane Miles	Cost per Lane Mile	Average Cost per Hour	<i>Approximate Total Hours ¹</i>
Superior	Street Sweeping and Flushing	\$220,055	3,528	\$62.37	\$303	<i>726</i>
	Culvert/Underdrain Maintenance	\$129,971	3,528	\$36.84	\$137	<i>949</i>
	Ditch Clean-out	\$114,967	3,529	\$32.58	\$71	<i>1,619</i>
	Total	\$464,993	10,585	\$131.79	\$511	<i>3,294</i>
North	Street Sweeping and Flushing	\$191,702	4,223	\$45.39	\$134	<i>1,431</i>
	Culvert/Underdrain Maintenance	\$209,655	4,224	\$49.64	\$91	<i>2,304</i>
	Ditch Clean-out	\$29,851	4,222	\$7.07	\$70	<i>426</i>
	Total	\$431,208	12,669	\$102.10	\$295	<i>4,161</i>
Grand	Street Sweeping and Flushing	\$505,652	3,539	\$142.90	\$404	<i>1,252</i>
	Culvert/Underdrain Maintenance	\$59,219	3,538	\$16.74	\$242	<i>245</i>
	Ditch Clean-out	\$84,283	3,538	\$23.82	\$67	<i>1,258</i>
	Total	\$649,154	10,614	\$183.46	\$713	<i>2,754</i>
Bay	Street Sweeping and Flushing	\$334,479	3,707	\$90.22	\$123	<i>1,168</i>
	Culvert/Underdrain Maintenance	\$135,315	3,707	\$36.50	\$88	<i>1,781</i>
	Ditch Clean-out	\$5,450	3,707	\$1.47	\$58	<i>76</i>
	Total	\$475,244	11,122	\$128.19	\$269	<i>3,025</i>
Southwest	Street Sweeping and Flushing	\$166,379	1,056	\$157.52	\$1,541	<i>108</i>
	Culvert/Underdrain Maintenance	\$170,882	1,673	\$102.14	\$81	<i>1,336</i>
	Ditch Clean-out	-	0	-	-	<i>0</i>
	Total	\$337,261	2,729	\$259.66	\$1,622	<i>1,444</i>
University	Street Sweeping and Flushing	\$446,386	2,907	\$153.54	\$433	<i>1,717</i>
	Culvert/Underdrain Maintenance	\$81,650	2,908	\$28.08	\$44	<i>1,669</i>
	Ditch Clean-out	\$62,075	2,907	\$21.35	\$70	<i>818</i>
	Total	\$590,111	8,723	\$202.97	\$547	<i>4,204</i>
Metro	Street Sweeping and Flushing	\$3,454,077	4,613	\$748.82	\$92	<i>37,544</i>
	Culvert/Underdrain Maintenance	-	0	-	-	<i>0</i>
	Ditch Clean-out	-	0	-	-	<i>0</i>
	Total	\$3,454,077	4,613	\$748.82	\$92	<i>37,544</i>
Total	Street Sweeping and Flushing	\$5,318,730	23,574	\$1,243.24	\$433	<i>43,946</i>
	Culvert/Underdrain Maintenance	\$786,692	19,577	\$269.94	\$114	<i>8,283</i>
	Ditch Clean-out	\$296,626	17,904	\$86.29	\$67	<i>4,198</i>
	Total	\$6,402,048	61,055	\$1,599.47	\$660	<i>56,427</i>

¹Wayne County and many cities do not report labor hours in LAPS. The number of hours listed in italics is based the average "cost per hour" obtained from local agencies which had reported the number of their hours spent on the activity.